In tuberculous kidneys I believe the perirenal fat is involved more often than we suspect. I believe it is important to remove as much of this tissue as possible. I have not been in the habit of removing the ureter, but I have lately adopted the procedure of bringing the ureter out and suturing it to the skin at the lower angle of the wound, much as we treat the vas in our tuberculous epidimitis. I have not had a large enough series of cases to pass any judgment on the value of this procedure. Since doing this I have not had a wound break down, and I have never seen any bad results from it.

Doctor Mathé mentions septicemia as a complication in renal surgery, but does not dwell much upon it in his discussion. Particularly in kidney stones, complicated with infection, should the danger of septicemia be emphasized. The greatest care should be taken to clear up the kidney infection and we should not be in too great a hurry to remove the stone. I recently lost a patient from septicemia, although we treated the infection in the kidney for two weeks after the fever had subsided and the urine was free from pus, before we removed the stone.

❦

Doctor Mathé (closing)—The constructive criticism of this paper brought forward in the discussion of Doctors Dillon, Hinman, and Manson, aids in the accomplishment of its purpose, which is improvement in technique, prevention of complications, and lowering of mortality.

Doctor Dillon suggests the advisability of performing a two-stage nephrectomy in those cases of renal abscess and carbuncle in which the tunica fibrosa is ruptured in the process of delivering the kidney and the perirenal tissues thereby infected. This is a wise procedure and should also be applied to cases complicated by perinephritic abscess. However, if there is no pre-existing infection of the perirenal tissues and, if at the time of operation they are carefully protected by gauze packing, it seems logical that the kidney may be removed without danger of infection. As Doctor Hinman emphasizes, infection is an important factor. Limitation of space did not permit me to dwell sufficiently upon it in this article.

There is no question but that rough handling of the kidney, severe retraction and undue loss of blood lowers the local resistance of the kidney, so favoring infection. In doing conservative operations on kidneys presenting pelvic infection, urinary antiseptics are given, pelvic lavage instituted and fluids forced in order to clear up or at least to minimize the amount of infection in the kidney at the time of operation. As emphasized by Doctor Manson this is an important factor in preventing septicemia which is more likely to occur, because of the greater vascularity, when the parenchyma rather than the pelvis is opened. Operations on the kidney can be performed quickly, but safety should have precedence over speed. Good exposure gained by a wide incision, division of the costovertebral ligament, and the proper posture of the patient, coupled with reasonable speed and good teamwork on the part of the assistants, will permit the average kidney operation to be performed in about an hour's time. The use of the fluoroscope at the time of operation will facilitate the search for stones by assuring the surgeon that they are all removed, and thus shorten the time of operation and eliminate the possibility of leaving fragments behind to act as nuclei for future stone formation.

The diversified opinion as to the treatment of the ureter in performing nephrectomy for tuberculosis is exemplified in the discussion of Doctors Manson and Dillon. Doctor Manson never had a tuberculous wound break down after removing the perirenal fat and bringing out and suturing the ureter to the lower end of the skin incision, whereas Doctor Dillon obtains complete closure in four weeks by removing the ureter also. Although I always attempt to remove the perirenal fat, and I have treated the ureter by both of the above methods, nevertheless 13 per cent broke down. Based upon a review of the literature this seems to agree with the experience of most surgeons. At the recent meeting of the western branch of the American Urological Association held in Seattle on July 6, 1927, B. Scholefield reviewed the causation of persistent sinuses and delayed healing of tuberculous nephrectomy wounds in eighty consecutive cases at the Peter Bent Brigham Hospital. His complete review of the literature and detailed study of these cases prove that a certain percentage of wounds break down, no matter what disposition is made of the ureter; sinuses are often due to a tuberculous infection of the granulation tissue that forms in the process of healing. In some cases these are cured by exposure to the sun rays; in others closure of the wound can only be accomplished by clean complete removal of the infected granulation tissue.

There is no question that there is considerable danger of hemorrhage in releasing clamps that have been left on the renal pedicle in performing nephrectomy. Certain extreme emergency conditions consisting of pre-existing shock due to the loss of blood from kidney rupture and that type of shock that sometimes suddenly occurs while removing extremely enlarged kidneys warrants its occasional use. In the six cases in which we left them in place, we felt that the danger of subsequent hemorrhage was far outweighed by the danger of death from shock. It is well to wait eighty-two or ninety-six hours and not twenty-four hours before removing the clamp. The clamp is carefully loosened notch by notch and left in apposition to the pedicle for an hour. If no hemorrhage occurs, sterile olive oil is poured into the wound in order to assure lubrication and the clamp carefully removed.

I wish to thank Doctors Dillon, Hinman, and Manson for describing some of their experiences with the complications of renal surgery. These statistics, added to the aggregate of those of other urologists throughout the country, should help lower the mortality, reduce the complications, and improve the technique of renal surgery.

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## SENSITIZATION PHENOMENA IN DERMATOLOGY

*By* H. J. Templeton, M. D.
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Discussion *by Charle E. Schoff, M.D., Sacramento; C. G. Stigall, M.D., San Diego; Douglass W. Montgomery, M.D., San Francisco; Albert H. Rowe, M.D., Oakland.*

IN discussing sensitization phenomena in dermatology I would rather do so under the broad term "hypersusceptibility" than to confine my remarks to the narrower term "anaphylaxis." For in sensitization we see two types of reactions. First, true anaphylaxis due to sensitization to some definite protein; and second, a hypersensitization to agents of varying chemical composition and which cannot, strictly speaking, be classed as true instances of *protein* sensitization. Under the heading of anaphylaxis would come the urticarias, etc., due to sensitization to some definite food, such as crab, while under the second heading mentioned above would come such cases as extreme sensitization to paraphenylendiamin used in dyeing fur neck pieces.

We may also divide the agents to which the skin may become sensitive into those with which it comes into contact from without and those acting upon it from within the body. This is the most practical way to approach the subject.

### EXTERNAL AGENTS

Most of the dermatoses produced by contact with external agents are of the dermatitis venenata type and can roughly be quickly differen-

tiated from those produced by internal agents which more frequently paint a picture of urticaria, erythema multiforme, toxic erythema, etc.

Several complete books have been written on the subject of sensitization of the skin to external agents. Instances have been reported of sensitization to a vast number of the objects with which man comes in contact. Hence, I will mention only the more common ones: paraphenylendiamin in hair dyes, quinin hair tonics, mascaro for blacking eyelashes, orris root in dry shampoos, in face powders or tooth pastes, rouges, leather hat bands. Any of these may produce a dermatitis of the face in sensitive subjects. The treatment is simple—remove the offending agent. If what is responsible cannot be determined have the patient stop using anything that has been applied to the affected area for a while and resume the use cautiously, one by one, after the dermatitis has disappeared. Dermatitis of the neck may be produced by fur neck pieces (and this is apt to occur the first time the patient perspires when wearing a new piece) beads, silk (rarely) or dyed scarfs. A dermatitis of the body can come from sensitization to wool underwear.

It is extremely difficult to determine just what external agent produces a dermatitis of the hands. Intelligent patients can help greatly in the search by jotting down notes in regard to all the objects with which their hands come in contact in their occupation, their home life, and their hobbies. Under the occupational dermatoses can be mentioned the primrose, chrysanthemum, tulip dermatitis of florists, the turpentine dermatitis of painters, cement workers dermatitis, that from novocain in dentists, from formalin and bichlorid in physicians, from hair tonics in barbers, from flour in bakers, and sugar in grocers and others too numerous to mention. The tracing of the offender in these cases requires a Sherlock Holmes.

A careful study of the patient's occupation and habits is of far more value than the cutaneous tests, although these should be resorted to in obscure cases. Flea bites are well known in the San Francisco Bay district, but it is not so generally known that the poison which the flea injects may, in sensitive patients, produce a widespread urticaria in areas removed from the original bites. Poison oak, seen so frequently in this district, needs only to be mentioned, as does the method of treating it by desensitization with hypodermic or oral administration of extracts of its leaves. A reaction, distinctly allergic in character, which I have observed in a few of my cases treated by this method and which I have not seen mentioned in print, is the occurrence of widespread urticarias following the injection of poison oak extract in patients suffering from poison oak. These I interpreted as true allergic reactions, as the urticarias came on immediately following the injection of an allergin, poison oak, to which the patients were known to be sensitive.

### ENDOGENOUS AGENTS

Cutaneous reactions produced by endogenous agents are much more apt to be instances of true allergy than those mentioned above. Moreover, they are especially prone to occur in patients with other evidences of allergy such as hay fever or asthma in themselves or their ancestors. One author found that out of a series of 103 cases of cutaneous allergy 100 had signs of allergy elsewhere (hay fever, or asthma).

In eczema, urticarias and other dermatoses resulting from allergins from within the body, the determination of the offending allergin is quite difficult. In classifying such cases as allergic I lay a great deal of stress upon a history of hay fever or asthma in the patient or his family. A carefully taken history will sometimes disclose the ingestion of some particular food just prior to the onset of the urticaria or eczema. It is well to have the patient keep a diary and write in it all of the happenings and all of the foods ingested prior to each outbreak of his eruption. After several attacks he may be able to pick out the responsible agent. In the great many cases in which these methods fail, but which we feel sure are allergic, we must resort to cutaneous protein sensitization tests. I personally use the scratch method of application routinely and reserve the intradermic tests for special cases. The reactions must be studied very carefully, for the enormous wheals so commonly seen when testing for hay fever are extremely rare in dermatologic testing. Positive reactions are comparatively small, sometimes but little larger than the control and rarely measure over 10 mm. in width.

False positive reactions frequently occur. I have obtained strongly positive reactions to foods which the patient was eating with impunity. I have also obtained negative reactions to proteins the ingestion of which would precipitate an attack of urticaria. Urticarial skins react so easily to all irritants, even to the scratches, that the tests may all seem positive and valueless. Following an attack of urticaria the skin may be in a state of anti-anaphylaxis for a few weeks and so give false negative results. All of these difficulties can be minimized by repeating the same tests on several different occasions.

The best known example of cutaneous anaphylaxis is the serum sickness, generally urticarial in nature, which comes on about eight to twelve days following the injection of the various sera. If a patient is known to have received a dose of a serum some time previously or is suspected of being sensitive to it, we should desensitize him by giving a number of small, gradually-increasing-in-size, doses of the serum before giving a second large dose. Or, better still, use serum derived from some animal other than that which furnished the original serum. For example, ox serum for the second dose if horse serum was used first.

Urticaria and erythema multiforme are so closely related that they can be considered together. Both can generally be regarded as reactions of sensitized skins to some specific allergin. While the offending agent in most cases of urti-

caria is some food such as crab, shrimp, lobster, strawberries, etc., it may be bacteria or their toxins from some distant focus of infection. This is particularly true in erythema multiforme which in most instances is the response of an allergic skin to bacteria from some focus of infection to which the skin has become sensitive.

It is difficult to say just how high a percentage of eczemas are due to sensitization to foods. Certainly the percentage of proved cases is rather low and yet we should always consider this possibility and run protein sensitization tests on all of our obscure cases. In infantile eczema we frequently find that the trouble began at the time when the child was first put on a mixed diet. If we can correlate the onset of the eczema with the date on which some particular food, egg for example, was started, we can remove the offending food from the diet and secure brilliant results. Protein sensitization tests can be used in determining the cause of infantile eczemas, but in these little patients a simpler plan can be adopted. This consists of putting the child back on the diet, generally milk, upon which it was doing well before the eczema developed, keeping it there until the eczema has improved and then adding one food at a time, say one food per week, and carefully noting the child's reaction to each food. Infants on the breast may be sensitive to proteins ingested by the mother. Just as in adults, infantile eczema is not always a sensitization phenomenon and other causes must be sought and remedied.

### CUTANEOUS PROTEIN SENSITIZATION TESTS

Dermatologists sometimes use a special method of applying the tuberculin test, an allergic reaction. When a given cutaneous lesion is suspected of being tuberculous, a tuberculin ointment is rubbed into it. If the lesion *is* tuberculous a focal allergic reaction takes place and the lesion flares up violently. The luetin test, an allergic test for syphilis, has been abandoned by syphilologists as unreliable and worthless.

I am a firm believer in the importance of hypersensitiveness in the production of many of the dermatoses. No one who has done any amount of work in dermatology and allergy can doubt the truth of the basic principle involved. Such excellent results were early obtained in the diagnosis and treatment of hay fever and asthma that dermatologists originally thought that similarly brilliant results could be obtained in the allergic dermatoses. Some truly excellent results were obtained, but many failures were also noted. Gradually the dermatologist has come to look upon these tests, not as a quick, easy, infallible method of arriving at a diagnosis, but rather as a valuable aid to be used in certain difficult, obscure cases. In a small percentage of cases they enable us to make an absolute diagnosis of the cause of the eruption and then our results are brilliant. This percentage of valuable results, small though it may be, certainly justifies the use of these tests in dermatologic practice.

### TREATMENT

If the substance to which the patient is sensitized can be discovered by means of the history or by cutaneous tests and removed, recovery is generally prompt. If its removal is not practical, as in sensitization to very common articles of food such as wheat or eggs, desensitization may be practiced. This is a valuable aid, but the desensitization is not permanent and must be repeated at intervals.

In allergic dermatoses, the cause of which cannot be ascertained, we may practice non-specific desensitization. This can be done by feeding peptone before meals, by injections of peptone, by injections of the patient's own blood serum, and by raising the patient's serum calcium by administration of calcium lactate and parathyroid followed by general body radiations with quartz light.

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### DISCUSSION

CHARLES E. SCHOFF, M. D. (Farmers and Mechanics Bank Building, Sacramento)—Doctor Templeton has summed up the subject very nicely and his sounding the keynote of conservatism relative to the efficiency of cutaneous allergic test reactions is well taken. The inexperienced are apt to accept laboratory diagnosis as final rather than accept it as an adjuvant to a definite conclusion after a thorough historical and clinical examination has been made.

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C. G. STIGALL, M. D. (3950 Alameda Place, San Diego)—Doctor Templeton has covered this subject so thoroughly and concisely I feel there is little room for comment. His remarks concerning the administration of calcium lactate and parathyroid in urticaria impressed me rather forcibly.

In the past year I have noticed a decided increase in urinary acidity in practically all cases of this type. The acidity sometimes will vary considerably in the course of twenty-four or forty-eight hours, requiring several tests to determine a definite average.

Some of the most obstinate and puzzling cases have shown very gratifying improvement and recovery by the liberal use of other alkalis with the calcium lactate and parathyroid in order to keep this urinary acidity at a low level. Also by a strict diet of alkaline-producing foods until the symptoms have cleared sufficiently to allow other foods consistent with the individual case.

My experience has been that good results in skin reactions depend upon meticulous application of the individual tests, especially in asthma and hay fever, and by keeping in mind the probability that tomorrow may show a different picture under apparently the same conditions.

Oftentimes when a diagnosis seems remote some chance remark made by the patient will help clear matters considerably.

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DOUGLASS W. MONTGOMERY, M. D. (323 Geary Street, San Francisco)—The skin may be regarded as a gland with its free surface directed outward, and having imbedded in it a great number of subsidiary glands for secreting sweat and sebum. There are also in it pitlike and slitlike invaginations out of which spring hairs and nails. The secretion from the surface of this gland consists of epithelial cells, and is called scurf or dandruff, which is commonly supposed to consist only of dead cells. We, however, do know that similar cells thrown off in a similar way do convey important secretions such as milk and sebum. It is indeed probable that these skin cells constitute an important emunctory for waste or poisonous matters.

As the surface of this skin gland is exposed to view and touch, symptoms, which entirely escape notice in the internal glands and viscera, are here readily seen

and felt. In other words it may be critically examined as no other gland can be.

Another feature of the skin is the multiplicity of its constituents. It is most plentifully supplied with sensory nerves, in which any functional or structural change may cause either complete insensibility, or increased sensibility as evidenced by itching, burning or pain. We have then the largest gland of the body with its secreting surface covered only by a thin translucent layer of horn, and the body of the gland itself richly supplied with blood vessels, and with nerves, motor, sensory and vasomotor, and many of the sensory nerves endowed with special receptivities, as locality, touch and pain, and with one very especial receptivity giving rise to itching. Now reflect that the deep or internal aspect of this extensive gland is exposed to influences conveyed to it by the blood current and by its nerves, motor, sensory, and vasomotor, and that its external surface comes in contact with the outer world with its irradiations, atmosphere and other innumerable material contacts, and that to each of these influences it responds in a different way, and that to some of them it responds in a number of different ways. For instance, the stimulus of the lepra bacillus alone gives rise to a long list of symptoms.

Under the broad term "susceptibility" we include all the various ways the skin and its different tissues and organs may react to each of the innumerable causes and influences to which it is exposed. Innumerable contacts pass unnoticed, or are beneficial or are pleasurable, but when the skin or any part of it is so tuned to any ordinary stimulus as to give rise to unusual or disagreeable symptoms instead of the normally unnoticed, or beneficial or pleasurable ones, it is said to be sensitized to that stimulus.

Of late years a great deal has been learned about these sensitizations, and many papers such as the present excellent one by Doctor Templeton have been written on the subject, and although the field is a vast one, it is so important, especially to dermatologists, that any good consideration of it is welcome.

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ALBERT H. ROWE (242 Moss Avenue, Oakland)—That allergy or hypersensitiveness of the skin is the cause of many eczemas and most urticaria as well as angioneurodema has been well emphasized by Doctor Templeton. This fact is accepted by too few physicians largely because of the difficulty in ascertaining the allergic agents active in each case. The cause of contact dermatitis such as that of the face, neck, or arms, from pollens or animal emanations such as those from wool, feathers, silk, or mohair; of the hands from wheat flour; and of the face and neck from orris root in powders or cosmetics, can usually be ascertained by the history and through skin testing. Urticaria and eczema resulting from ingestion of foods, however, are often difficult to diagnose. Certain cases give skin reactions to foods, especially to wheat, milk or eggs, and so solve the problem. However, skin reactions are negative in about 50 per cent of the patients who have food allergy. Many physicians unfortunately have discounted allergy in the etiology of these conditions because of such negative skin tests. Due to this failure of the skin to reveal all sensitizations especially to foods, treatment must frequently be based on history and on the experience of the physician in prescribing the diet for such skin conditions. It is possible through allergic diagnosis to obtain relief for many cases of eczema, urticaria and angioneurodema that have resisted the usual methods of dermatological therapy. The other types of sensitization which Doctor Templeton has described due to dyes, drugs, lacquers and similar substances, are probably the result of a tissue disturbance identical with or closely related to allergy which is as yet poorly understood. Recognition of such causes, however, is most important for the relief of the skin lesions.

# ELECTRODIATHERMY—ITS USE IN THE TREATMENT OF BENIGN AND MALIGNANT LESIONS OF THE UTERINE CERVIX

*By* FRANK M. MIKELS, M. D.
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DISCUSSION *by A. V. Pettit, M. D., San Francisco; R. H. Shippey, M. D., Long Beach; Frank W. Lynch, M. D., San Francisco.*

IN the medical and surgical treatment of pathological conditions of the regenerative organs conservatism is becoming the keynote of present-day practice. A new therapeutic measure is invariably met with skepticism and distrust. Archaic medical methods and radical surgical procedures seem to dominate the enthusiasm and judgment of many very eminent and successful practitioners.

The uterine cervix is the portal for the perpetuation and preservation of the species. The integrity and normal function of the uterine cervix is essential to the future welfare of the human race. The time has come when the treatment of this organ should be based upon principles of conservation, aiming at a maintenance of its normalcy in structure and function. This can be adequately accomplished in good part by the use of electrodiathermy in the treatment of many benign and malignant lesions of this portion of the uterus.

Electrodiathermy means the application of a special modality of electricity which induces heat into the tissues of the body. The body is a poor conductor to electricity and because of its resistance to the current an elevation of body temperature results. The modality giving the best results in treatment of the uterine cervix is the D'Arsonval current, a form of high frequency. The D'Arsonval current may be obtained most conveniently from the modern transformer type of high frequency apparatus and from either the stationary or portable model. The latest types have three outlets, for high, medium, and low voltage, and are so constructed that the milliamperage may be regulated for the particular treatment requirements of each lesion.

## TECHNIQUE

Various kinds of electrodes are obtainable. The most convenient one has been designed by Dr. T. Howard Plank. It is composed of a wire covered with thick rubber insulation having a connector at one end to fit into the socket of the machine and a vulcanite handle at the other end into which may be inserted pieces of aluminum wire of various sizes, 2 millimeters in diameter and 5 to 20 centimeters long. This aluminum wire is also partially covered with soft rubber tubing, leaving about 1 to 2 centimeters of the end exposed. The end of this wire may be blunt or sharpened as the technique requires.

Other more elaborate sets of electrodes have been invented and made available. These sets are composed of various sized and shaped gold-plated discs and sharp, pointed gold-plated rods which may be screwed to a vulcanite handle attached